ANGIO-NEUROSIS

RAMSAY SMITH

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Fig. A.

Fig. B.

Fig. C

Fig. D.

Fig. E.

Fig. F.

ANGIO-NEUROSIS:

BEING STUDIES IN DISEASES OF THE VASO-MOTOR SYSTEM.

BY

W. RAMSAY SMITH, M.B., C.M., B.Sc.

Senior Physician to the Adelaide Hospital, South Australia.

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PREFACE.

WITHIN very recent times several distinct diseases have been ranged in the category of angio-neuroses. Graves's disease and Raynaud's disease may be considered the terminals of a series that includes in it, hay-asthma, angio-neurotic œdema, Nothnagel's angina pectoris, urticaria, certain forms of menorrhagia, and many other such apparently diverse conditions.

I intend in the following pages to describe in detail two very distinct and definite diseases of the vaso-motor system that I have differentiated, one, which came under my observation in my student days and which I studied long and with much interest, I have named General Angio-neurotic Œdema, and the other Erythema-urticaria; to give an account of other manifestations and associations of angio-neurosis that have come under my notice in practice, and to compare these with and supplement them by other recorded

observations; to consider the factors in the etiology of angio-neurotic conditions; to discuss the pathology of the various conditions; and finally to review the treatment.

An outline of the subject has appeared in the *Medical Annual* for 1895 and 1896, and some of the chapters have already been published in the *Practitioner*, the *Lancet*, the *Edinburgh Medical Journal*, and the *Medical Times and Hospital Gazette*.

It is necessary that I should mention that all the observations here recorded have been made in practice in Scotland and North Wales.

W. R. S.

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ANGIO-NEUROSIS.

CHAPTER I.

GENERAL ANGIO-NEUROTIC ŒDEMA.

IN describing the main features of what I regard as a hitherto unnoted disease, in so far at least as it affects the whole body, I think I cannot do better than give first an account of the most typical case of it that I have met with. This case came under my observation in January, 1887.

The subject was a lady, aged 19, living in the country in comfortable circumstances. She had returned home after a stay of two or three years at a ladies' boarding school. While at school she was never quite well, dysmenorrhœa, dyspepsia and headaches being the chief symptoms she complained of. In bodily appearance she was over the average height, large-boned, light-haired, and of fresh complexion. The skin appeared somewhat harsh on close examination.

In January, 1887, she was seized with great pain in the ear. The external meatus and surrounding parts were much swollen, hard, and inflamed. Along the course of the auricular nerves, and scattered over the pinna, were numerous small white vesicles. The pain

was neuralgic in character, and shot into the ear. From the distribution of tender spots I was led to conclude that the symptoms might be due to reflex irritation. I examined the teeth, and found caries of one or two teeth in the upper jaw. Local treatment of the teeth, and bromides internally, relieved the symptoms in a few hours.

The patient at this time was anæmic and nervous; the heart was debilitated; frontal headache was frequent; and power of concentrating the attention seemed to a very great extent to be lost. I examined the eyes, and found that myopia was present to the extent of 2·5 dioptres.

A week or two after this attack, I was told the patient had been taken ill, and that she seemed to have "scarlet fever." I found her condition as follows: The ear presented the same appearance as on the former occasion; but now the whole face was swollen, hard, and hot to the touch, red in colour, and covered here and there with the minute vesicular eruption mentioned above. The whole body also was swollen, hard, and hot to the touch, and the skin was of a bright-red colour. There was intense itching of the whole body, and painful tingling in the palms of the hands and soles of the feet; and the patient complained of peculiar sensations in the head. The temperature was from 4° F. to 5° F. above the normal.

This attack was treated by full doses of antipyrin, and local applications to the ear where the trouble had begun. In two or three days the patient had recovered

from it, and then the skin began to peel off in large patches. This peeling continued for a week or two, until the skin of the whole body had been renewed.

On account of the anæmia and the heart symptoms, the patient was put on a course of arsenic, ergot, and bromide of iron; the defective teeth were attended to; lenses to correct the myopia were ordered; and her general health improved very much. Notwithstanding this improvement, there were recurrent attacks of the disease from time to time, at intervals of one or two months. On some occasions the attack seemed to have a relation to menstruation; at other times it appeared to be brought on by excessive physical exertion or mental excitement. On every occasion the attack came on suddenly; the chief characters appeared to be *high temperature*, *certain subjective sensations*, *hyperæmia of the skin*, *and subsequent desquamation.*

The subjective sensations may be described thus, in the patient's own words: "The first sign of this trouble began in my ears with a strange noise—not loud. I felt them swelling. Then gradually my head felt strange, as if it too were swelling. Then my whole body was affected. Sometimes I became very sick, at other times I swooned away and became almost unconscious, and for the first day or two of the attack, I always became quite giddy when I tried to raise my head. The heat in my head was fearful, and in fact over my whole body, but more especially in the palms of the hands. In a day or two the skin began to peel off, beginning with my head and face (my hair also fell out considerably)

and gradually wearing down till it came off my feet, sometimes months after I was in my usual health."

In connection with this case it is desirable that I should record the effect on the patient of one or two drugs.

On one occasion, a dentist injected into her gums rather less than half-a-grain of hydrochlorate of cocaine, and extracted a tooth. This was followed immediately by great prostration, in fact almost by collapse. The quality of the drug was above suspicion, and the injection of cocaine and extraction of the tooth were skilfully done. On another occasion I administered chloroform to her for tooth-extraction. During the administration both pulse and breathing were carefully watched, and it was observed that the pulse became feeble and nearly stopped, and the patient appeared to swoon away, while all the time the breathing continued to be perfectly natural. Ether was substituted for chloroform, and the pulse immediately recovered itself. Anæsthesia was kept up by the combined use of ether and chloroform ; and it was observed that every attempt to discontinue the ether was followed by cessation of the pulse and apparent fainting. At the beginning of the administration, when the pulse first stopped, the patient was conscious, and after the operation described her feelings at the time.

After these experiences I advised her as to the necessity of carefulness in the use of cocaine and chloroform. Some time afterwards she suffered from what appeared to be rheumatism in the arm. The

doctor who was called in prescribed a liniment. This was applied to the arm, which immediately became greatly swollen and intensely painful. Remembering what she had been told about chloroform, she sent at once to find out if the liniment contained this substance. When she found that it did, she discontinued the use of it, and the arm gradually recovered.

Here it may be well to consider the question, What is this disease? The first time I saw the condition of the ear, I regarded the affection as a local disturbance of the vaso-motor system, due to reflex irritation initiated by carious teeth. I think that the diagnosis was fully confirmed by the result of the treatment and the course of the trouble. In a "general attack," the whole body presented very much the same appearance as did the ear and surrounding parts in the first attack; and I think there can be little doubt that the whole of the symptoms are to be explained by the condition of the vaso-motor system.

The exciting cause in any given attack is by no means easy to determine. In some cases it was apparently local, *e.g.*, cold in the ear, carious teeth, uterine congestion; in other cases it appeared to be more general, *e.g.*, mental excitement, or bodily exhaustion.

On September 5th, 1892, I saw another case that reminded me forcibly of the one I have just recorded. The subject was a girl, 5½ years old, who, in external configuration, closely corresponded with the patient described above. On September 5th she was

feverish and restless, her face was red, and she was vomiting. On September 6th she was feverish; there was a red rash on the face, arms, and legs, and the vomiting continued. I ordered 3 grains of antipyrin to be given every six hours. On September 7th her general condition was much improved, but the rash was out on the whole body, and she complained of great itchiness, especially in the hands, feet, wrists, and ankles. In two or three days desquamation was well established, the skin coming off in large dry patches. There were no throat symptoms, and the rash was quite different from the eruption of measles or scarlet fever.

A third very typical case came under my care in 1894. A domestic servant, aged 24, consulted me on May 28th on account of swelling of the face, body and limbs. In general appearance the patient is big-boned and of ruddy complexion; the skin is "harsh"; the hair is what she herself describes as "between colours." She had scarlet fever when 5 years old She menstruated first when 14 years old, and then ceased for five months. About two years ago she began to suffer from periodical swellings of the whole body. About a year ago she had a "fit," said to be apoplectic. The swellings came on before, but sometimes after menstruation, which occurs fortnightly and lasts only part of a day. There is no leucorrhœa. The swelling may also come on without relation to menstruation; mental excitement and worry will cause it. An attack generally lasts a few days. She says the swelling "would be fearful if she took no medicine to reduce herself." During an attack there is

a feeling of heat over the whole body, and itching in parts, especially in the back and in the neck. The whole body swells and becomes red. After an attack there is desquamation, the skin looking like flour.

She complains of left-sided headache in the region of the temple, and pain shooting into the ear and in the mastoid region and side of the neck. Examination of the mouth shows decayed stumps of premolars and molars in the upper jaw on the left side. During an attack she sees black spots falling and turning round, and also "silver spots." She cannot eat, and she has a strong inclination to vomit. She has not observed polyuria after an attack. She has a feeling of "pins and needles" in the soles of the feet. She suffers from palpitation, breathlessness and constipation. I prescribed the following mixture :—

℞ Antipyrini gr. 120 | Aquam ad ℥vj
Spiritûs Chloroformi ℥ss | s. et m.
Sig.—℥ss t.i.d.

On May 31st, I saw the patient again. She had not menstruated. The swelling is less. The skin is of its natural colour and is coming off in fine white flakes. She still complains of some pain in the neck and mastoid region. I have advised extraction of the stumps of teeth. She said the medicine made her feel drunk and drowsy : that she had chloroform once rubbed in for toothache, and that she felt "sleepy and queer" ; and that recently, when she had "gas" for tooth extraction, she could scarcely be roused from its effects. She also states that about eighteen months ago she consulted a medical man

about the swelling, and he declared it was due to pregnancy. She felt much hurt at the insinuation and since then has been patronising druggists and old women in hope of finding something to reduce the swelling. Her list of remedies, domestic and other, was an interesting one.

I saw her again on June 10th. Both ears were swollen and hard, and very itchy. The condition was this: Behind the left ear there is an œdematous patch, and there is also a patch on the back of the left elbow, and another on the left leg. The heart is hypertrophied and dilated, and the first sound is reduplicated. The hands and feet are not hot now, but cold. She has menstruated this time at one month, which is quite unusual for her.

A comparison of this case with the one I first observed brings out some remarkable resemblances. Both patients were young women presenting very much the same general appearance; in both cases there was a local cause for a certain amount of local and constitutional disturbance; in both a general attack presented the same features I have already described as characteristic of the disease; in both, menstruation and mental excitement were factors in the causation; and both patients exhibited certain well-marked idiosyncrasies to particular drugs. The attacks in both cases were undoubtedly acute, though less severe in the one under notice than in that first described.

Chapter II.

LOCALISED ANGIO-NEUROTIC ŒDEMA.

In the first case of General Angio-neurotic Œdema, reported above, the general attack was preceded by a purely local manifestation. I afterwards saw several other cases of the same sort, some of which looked so much like erysipelas, that they had been confused with that disease. By the end of 1892, I had prepared a a paper on the subject of General and Local Œdema, which, however, I did not publish till some time after. On the appearance of the record of my third typical case in the *Lancet*,[1] Dr. Dudley Cooper brought under my notice work that had been done by other observers in connection with the subject of Angio-neurotic Œdema, particularly a paper by him and Dr. Ernest Wills. On looking over all the literature on the subject, I fail to find any case corresponding to those I have recorded of General Angio-neurotic Œdema. What I do find is an account of investigations into conditions that are to be properly classed as Localized Angio-neurotic Œdema. The following is an abstract of the paper by Drs. Ernest Wills and Dudley Cooper in the Autumn number of *Brain*, 1893. These observers record five cases of Angio-neurotic Œdema observed by them. In all these cases, localised, red, œdematous patches, variable in size,

[1] July 14th, 1894.

irregular in distribution, hot to the touch, but not tender, appeared in various parts of the body, lasted for a day or two and then disappeared, leaving as a rule, no trace behind them. In no case was the general temperature raised; in none of the cases was there any organic disease likely to produce the condition noted; but all the patients might correctly be classed as neurasthenic. In discussing these cases, and similar cases recorded by other observers, the writers come to these conclusions regarding the *etiology* of the condition: That chief among *predisposing causes* are hysteria, hystero-epilepsy, neurasthenia, and the allied emotional states; other observers add heredity as an important factor. As regards *exciting causes* the writers give the first place to psychical disturbances, and enumerate as other causes: (1,) The onset of puberty; (2,) The climacteric; (3,) Gastric irritation; (4,) Excessive nervous drain during the time of adolescence. They state their view of the *pathology* thus: "A local paralysis of the vaso-constrictors, or a reflex stimulation of the vaso-dilators, causes a dilatation of the vessels of the subcutaneous tissues, which is followed by retardation and stasis of the blood. An exudation, usually serous, sometimes sanguineous, then occurs, producing an œdema, but the œdema is not sufficiently localised to cause any uplifting of the epidermis as a whole, and the resulting condition may be fitly termed an *abortive urticaria*." The writers note that other authors, Quincke, Dinkelacker, Rapin, Minich, Osler, and Strümpell, have recognised the association of Angio-neurotic Œdema with true urticaria.

This form of Angio-neurotic Œdema is, as I have already said, quite different from the acute form described by me, the most constant and characteristic symptoms of which are *high temperature, certain subjective symptoms, hyperæmia of the skin and subsequent desquamation.* But it has an affinity with cases of localised œdema that I have seen; only in some of my cases pain has been a notable feature, and most of my patients have shown no tendency whatever to hysteria, alcoholism, or gastric irritation, and little if any to neurasthenia.

Dr. Gerald Fitzgerald[1] has recorded and discussed three cases of another fairly definite manifestation of angio-neurosis, under the title of Acute Circumscribed Œdema. There are two varieties of this: (1,) The *cutaneous form*, in which the local changes may be divided into three stages. "First, a stage of redness and heat of the skin, accompanied by a sensation generally described as tingling; second, a stage of swelling, when the redness is succeeded by pallor, except around the margins, where it remains; third, a stage during which the serum escapes under the cuticle, raising it up into bullæ. These stages, however, may not all occur. The first only may develop, or the first and second, and the complete picture is seldom seen except where a very large area happens to be involved." (2,) The *subcutaneous form*, in which the skin itself is affected only in so far as it may be made pale by the mechanical pressure of the hard, tense and possibly painful tumour underneath.

[1] *Edinburgh Hospital Reports*, Vol. I., p. 179.

Dr. Fitzgerald notes that while the local symptoms generally disappear in at most a few days, the disease may be exceedingly chronic; one crop of lesions appearing after another; that there may be considerable constitutional disturbance during an attack, the pulse being quickened and the temperature raised; also that this disease is often associated with urticaria, and accompanied by such well-marked gastro-intestinal symptoms, that he feels constrained to raise the question "whether the mucous membrane of the stomach and intestine, is not subject to an affection more or less resembling that of the skin."[1] One of his cases had a history of asthma, another showed well the phenomenon of *tache méningitique.*

Although these cases appear to be a manifestation of an angio-neurosis distinct from the form reported by Drs. Ernest Wills and Dudley Cooper and others, yet a consideration of the variations in the two groups and of the number of "marginal cases" recorded, leads one to look upon them all as of the same species. The title "Localised Angio-neurotic Œdema" may properly be applied to them all.

[1] Compare Trousseau's notion about urticaria and asthma, p. 45.

Chapter III.

ERYTHEMA-URTICARIA.

This is the provisional name I have chosen for another disease I have differentiated. This disease is really a constitutional one, although in many, if not most instances, the local affection attracts most notice. The disease is so well marked in its symptoms and so definite in its course, as to warrant a distinctive name. I can perhaps best give an account of this disease by adopting the narrative form, and recording how it came under my observation.

The first time I saw the rash was on an infant 6 months old. The eruption, which partook of the nature of an erythema or an urticaria, was distributed pretty much all over the body, but was specially abundant in a zone round the upper part of the abdomen. The spots were single, as a rule, although here and there some were so close as to appear confluent. The appearance of the spots raised a strong suspicion that they might be due to the bites of insects. The boy had been in the garden playing among mown grass, and several of the spots had a central mark closely resembling the injury inflicted by a sting or a sharp pair of jaws. Subsequent observation convinced me that this theory was untenable. Some of the spots had no such mark, but were really wheals. The majority, however, consisted of white or

very pale pink spots, varying in diameter from an eighth to half an inch, becoming red within an hour or two, and then fading away in four or five days—other crops appearing in the meantime, and running a similar course. Some of the "spots" became hard and shotty in the skin; some, especially on the dorsal aspect of the fingers and toes, became almost warty, and remained for a week or more; and others became vesicular, and burst, exuding a clear coagulable fluid. The skin, in these cases would take two or three weeks to assume its normal appearance. Intense itchiness of the skin, polyuria, and a considerable amount of constitutional disturbance, were associated with the appearance of the rash. The attack passed off, but recurred after a few weeks, when the same train of symptoms was repeated.

No hypothesis I could frame would explain all the facts. One theory after another broke down on being tested by some new fact elicited in the course of observation; and no light was cast upon the subject until I had an opportunity of observing the disease in other patients.

When the boy was about 2 years old I had an opportunity of observing and studying the disease in his sister, an infant of about 4 months old. The same train of symptoms was exhibited in her case as in her brother's, and, strange to say, both children suffered from attacks at the same time. One was being suckled, the other was being fed on a mixed diet, so that food, though not feeding, as a cause of the disease, was to a certain extent out of court. For nearly five years

now I have had those two children under constant observation, and during that time I have observed many attacks on both (about twelve or fifteen in all, and more frequently in summer than in winter); but I have never seen one attacked by the disease without the other being attacked too at the same time, or within a day or two of the time.

A study of the conditions under which the disease occurred established a few more points, one of which, in particular, I think very important—that an attack, in the case of the boy, was almost always preceded by an ebullition of good spirits, which gave place to a nerve storm. The boy would become excited, walk or strut about, throw his arms about him ; then this exuberance of good nature would pass into an almost entire loss of control over his actions and speech, and in a few minutes afterwards the rash would appear on his body and limbs. The girl did not show the same amount of excitement and disturbance ; but she was by nature less nervous and less excitable than her brother.

Careful observation of the phenomena of the disease manifested in these two children gave me an indication what to look for in other patients similarly affected ; and since then I have met with about eighty cases, all of them presenting the same broad features, and differing only in detail. I select one or two from my note-books.

CASES I. and II.—Twin girls, aged 6 months. On account of the character of many of the spots, and the occurrence of the rash simultaneously in both infants,

the parents were almost forced to the conclusion that the eruption was caused by bites of insects. The eruption in its course and distribution very closely resembled the eruption in the first case I have described above.

CASE III.—Girl, aged 13 years. The eruption shows a very definite distribution. The rash appears on a zone on the body corresponding with the course and distribution of the ninth, tenth and eleventh intercostal nerves; also on the shoulders, especially over the clavicles, and on each side of the sternum corresponding with the termination of the intercostal nerves. The rash is almost entirely absent from the arms and legs.

CASE IV.—Woman aged 48 years, stout, flabby, but active; menstruation stopped at 34. The rash is all over the body, including the scalp and the hands and feet, the soles of the feet alone being unaffected. The eruption comes out after the patient is heated. The skin is very itchy—so bad, in fact, as to keep the patient out of bed all night, and walking up and down the floor almost naked in order to obtain some relief. The arms and hands swell up before the fire. The rash may be bad all night, and go away to a very great extent during the day. The patches are unusually large, most of them being of the size of a florin; some are much larger, some smaller.

The rash appeared for the first time about a year ago. The spots were then small—about the size of peas and

beans, none being so large as a florin—and were confined to the waist, and were intensely itchy ; afterwards they appeared on the backs of the hands, then over the whole body. The scalp suffered severely, and often broke with the violent scratching it was subjected to.

CASE V.—Man, aged 63 ; had been in India ; had lumbago ten years ago. Rash first appeared about that time. The rash began on the hands and neck ; then appeared pretty much all over the body, and was well marked around the upper part of the abdomen. The crops last usually a couple of days. He has not noticed them remain so long as four or five days. He feels sore before the eruption appears, especially on the head. The spots pass through the white and red stages, but never form blebs.

To summarise the observations on this disease, and to state the inferences made from these, I would say that I look upon the affection as a constitutional one, with a local manifestation, depending on the condition of the nervous system. The appearance of the rash is preceded by a certain amount of general constitutional disturbance, accompanied by a feeling of heat and itching locally. The rash may occur on any part of the body, but seems to select certain parts more than others—*e.g.*, a zone on the upper part of the abdomen, and the limbs. The character of the rash varies, but every variety may be seen on the same subject at one time. The appearance at first is usually that of wheals

of a whitish or pale pink colour, about a quarter of an inch in diameter. In a few hours this appearance changes. The "spots" become red and erythematous; some of them may become papular, hard and shotty; others, especially those on the dorsal aspect of the digits, may present the appearance of blebs, and exude a clear fluid after bursting. The size and number of the spots may vary in different individuals, and on the same individual both at the same time and in different attacks. Sometimes the whole body may be covered from head to foot, scalp included, with large irregular erythematous patches; but usually the spots are small, single, and confined to particular select areas. And I have noted one case in which all the train of symptoms of the disease is followed usually by the appearance of only one isolated spot. During the first day or two of the rash there is usually a great degree of local uneasiness and itching. This becomes less from the third to the fifth day, but in the meantime fresh crops may appear with all the associated symptoms. The papules usually take two or three weeks to disappear.

One thing impressed me very strongly during my early study of this disease, and that was its epidemic character. Individuals subject to the disease and living far apart were attacked by it at the same time; and if it appeared on one inmate of a household the other inmates that were liable to it usually had an attack within a couple of days.

As regards its geographical distribution, I thought at first that it was confined to certain definite areas, since

I had seen no cases of it outside certain localities. I have found cause to believe that the influence of locality has much to do with its incidence.

As to age and sex distribution, all I can say is that the large majority of cases I have seen have been in female children.

In the month of August, 1894, the boy in whom I first studied the occurrence of this disease had several attacks, not differing essentially from previous attacks, but showing certain features so characteristically that I had photographs taken of some of the appearances.

Fig. A, is a photograph taken at three o'clock in the afternoon of 31st August. All the wheals it shows appeared for the first time on the morning of that day. Some of them exhibit very well a central mark of a deep red colour like the bite of an insect, while others show not the least trace of this appearance. *Fig. B* is from a photograph taken at the same hour. In it the spots are seen in their earliest stage, a few minutes after their first appearance. This appearance is very characteristic, viz., a circular white elevation, surrounded by a pinkish area, hard to the touch, the pinkish colour fading on pressure to return immediately; and the whole of the skin of the part intensely itchy. *Figs. C* and *D* were taken twenty-four hours after *Figs. A* and *B*. They show the spots fading, less elevated, less "angry," about the same in number, but with new ones appearing further down the limbs. The spots on the left limb follow those on the right, at a day's interval. The symmetry is by no means perfect in this attack. *Fig. E*

is from a photograph taken on the afternoon of 3rd September. Nearly all the spots shown in it had appeared since morning, and the part of the body shown was the site of fleeting erythematous-looking patches over which the small spots were dotted. *Fig. F* is a photograph of the boy's sister taken on 4th September. It shows very pronounced symmetry; but in her case, too, the spots on the one limb were a day later. The spots on the right arm appeared on the previous day; those on the left arm are a day later, and are coming out in places very closely corresponding with those on the right arm. I have not observed such symmetry in the majority of the cases that I have seen; and I am glad to be able to give these illustrations of it.

Another thing that these photographs show is that the boy and the girl have an attack coincidently—all their attacks come at most at a day or two's interval; and the third inmate of the household, an infant of 4 months (breast fed) had mild attacks, too. More than this, other patients subject to the same disease have attacks coincidently with these; and many other manifestations of angio-neurosis invariably come under my observation at those times.

Chapter IV.

A STUDY IN FAMILY HISTORY.

A MATERNAL uncle of those patients, the subjects of erythema-urticaria, has described an attack of a severe form of this disease in his own body, associated with high temperature, a feature very uncommon in the cases I have seen.

The symptoms came on at once and in sequence for three days—nervestorm, etc.; soles, palms, forehead, face, scalp, back, front, abdomen, chest, limbs; erythematous, papular, shotty, patchy, confluent, wheals, puncta, subcutaneous nodules, dropsical congestion of face, congested eyelids; temperature 102·5° F., or 103° F., maximum; pulse 100—120. The skin was persistently erythematous for four weeks or more all over. A single round wheal appeared at two separate places three weeks after. There was no recurrence.

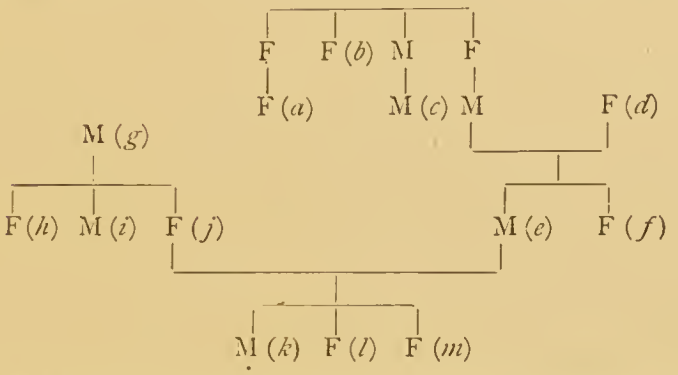
The patient says in an interesting note: "The conditions described had followed three weeks exposure to the June heat (varying from 70° F. to 90° F.), of Paris, where apparent "mosquito" bites had, night after night, produced on face and other parts accidentally exposed, infiltration swellings, of sizes varying from a shilling to a crown piece. The readiness to develop this local infiltration was very

marked ; the skin was for weeks in a state of heat-irritation, greater or less. The urticaria attack itself was directly sequent on (*a*,) over-heating after breakfast, and (*b*,) ingestion of tinned tongue. Experience of bug-bites twelve years previously, and again, of bug and "mosquito" bites in Paris four years previously, found the same readiness to inflammatory infiltration and reaction. On the other hand, repeated and prolonged exposure to almost all the major infections, including enteric fever, typhus, small pox, whooping cough, diphtheria—has, since scarlet fever at three, and measles at six years of age, resulted in no attack of any sort, unless occasional follicular tonsillitis be regarded as vicarious of all these.

The only other skin affection within memory, was a symmetrical wheal urticaria, six years previously, the rash appearing on the external surface of the hips and thighs for about an hour every evening, and about the same hour every evening for three weeks. The condition was associated with the hard work end of a college session. —W. L. M."

This individual case shows how very diverse may be the local manifestations of angio-neurosis in one person and in one attack—the body being a veritable *locus classicus* of eruptions for the time being. The family history of the three children shows how diverse may be the manifestations of angio-neurotic tendencies in different individuals.

The following is the history so far as it appears worthy of record :—



M is male; F is female; (*a*) is the subject of general angio-neurotic œdema, as reported in the *Practitioner*; (*b*) died of epithelioma of the urethra; (*c*) is the subject of asthma and most extensive and chronic eczema of the whole body; (*d*) was subject to migraine, asthma, and other visceral neuroses, and thinning and curving of the nails; (*e*) suffered from migraine; (*f*) suffers from periodical thinning and curving of the finger nails; (*g*) was an extreme example of a slow pulse (20 to 30 a minute), a family feature; (*h*) suffered from herpes, and repeated attacks of erythema of the fingers; (*i*) is the case of severe erythema-urticaria reported above; (*j*) suffered from subcutaneous abscesses and localised lupus; (*k*) is the case photographed as *Fig. A*; (*l*) is the sister photographed, and the subject of abnormality of the finger nails recorded in the *Journal of Anatomy and Physiology*[1]; (*m*) is subject like the two last to erythema-urticaria.

[1] Vol. xxvi, *p.* 406.

Thus, there is illustrated in this family record, on the one side typical angio-neurotic œdema, cancer, asthma associated with eczema, asthma associated with migraine and abnormalities of nutrition of the finger nails; on the other side characteristically slow pulse, erythema of the fingers, severe erythema-urticaria with diverse cutaneous and subcutaneous lesions, subcutaneous abscesses and localised lupus; and from a union of the two strains there has sprung a family of three all subject to an angio-neurosis showing itself as a definite erythema-urticaria.

Chapter V.

HEREDITY AND CONSTITUTIONAL TENDENCY IN ANGIO-NEUROSIS.

The facts I have mentioned when recording the cases of erythema-urticaria, point to hereditary or constitutional tendency as a factor in the causation. I have already referred to the manifestation of the same disease in their uncle, on the mother's side, and I ought to mention that their mother suffered for many years from a cutaneous affection of the cheek, which, with a series of abscesses in various parts of the body, was put down to vaccination as a *post hoc ergo propter hoc.* This local affection, which turned out to be lupus, was only kept in check for years in this country, but healed up under the influence of the Cape climate. Then, on the subject's return to Scotland, it broke out afresh and was prevented from spreading only by constant and careful treatment at Dr. Allan Jamieson's hands. A change to a part of the country with a climate recalling all the characters of the Cape has made the last trace of the disease disappear.

I have seen a case of erythema-urticaria in a child, in which the lesion goes on to papules, with a very "pustular" appearance. Vaccination was ascribed as the cause, since the vaccine pustule, though at first mild, took a virulent turn and became an abscess or ulcer,

deep down to the bone—the erythema-urticaria rash appearing at the same time. The mother of this child (whose sister I should mention, died from phthisis), came under my care for "ovarian neuralgia," accompanied by a whole train of visceral symptoms and migraine. She had a history of early rheumatism, septic sore-throat, and painful swellings like hazel-nuts under the skin of the arms—probably circumscribed œdema. She had undergone an operation on the uterus, under promise and assurance that this would cure her, instead of which it left her general symptoms worse than before. The father also suffered from migraine, pronounced to be "dyspeptic biliousness," which ceased with the use of proper spectacles. Both parents' eyes are highly astigmatic.

Miss P., aged 22 years, consulted me in July, 1894, about a spot of angio-neurotic œdema on the left cheek. The patch is triangular in shape. It came on first when she was 14 years old. It is always present in a more or less intense form. It is aggravated in summer, and by heat or fire, worry, or excitement, and just before the menstrual period. Sometimes there is a corresponding spot on the right side. There is a prickly, burning, bursting sensation, but the part never feels hard. Once the whole side of the head and face was swollen and hard, and prickly and painful. All the teeth behind the canines on both sides in the upper jaw are defective; in the lower jaw they are good. The right eye is hypermetropic to the extent of half a dioptre.

The previous history of this patient is interesting. In

October, 1893, she was brought to me for a "chest affection." She had been pronounced "weak in the chest," and was constantly "coddled" at home, wrapped up abroad, and denied all going out in the evening. I found adenoid vegetations in the posterior naso-pharynx, and peculiar vesicular structures (like the vesicles of a hydatid mole), about an eighth of an inch in diameter, behind the tonsils. These were coughed up in quantity. This condition seemed sufficient to account for the state of the chest. There was considerable deafness, and the patient was a mouth-breather. I removed the adenoids and vesicles by applications at intervals, of a solution of iodine in iodide of potassium and glycerine; and she went home intending to return and have the tonsils removed. On her return eight months afterwards, the tonsils were normal and needed no treatment; the deafness had gone. She had given up all her invalidism and was perfectly well, save for the patch of œdema which she wished to be treated for.

Some facts in her history are very important. When 11 years old she had urticaria. Her father was rheumatic; her mother was subject to headaches, and had had shingles. Both mother and daughter suffered from swelling of the ears. Belladonna makes the patient feel very lively, and alcohol has a very decided effect upon her. At home there were complaints about drains; one room was uninhabitable.

Constitutional tendency is also shown in CASES I and II, recorded at page 61, the daughter showing

erythema-urticaria, and the mother showing erythema nodosum, with visceral neuroses, manifested as asthma and chronic bronchitis. These facts are important. It has been known for some time that erythema nodosum tends to be hereditary in its manifestations, the rheumatic theory of its etiology being urged as an explanation; but I am not aware that an association, such as I now point out, has been traced between it and the neurotic tendency. The fact that visceral neuroses (and these are often largely vaso-motor) are often associated with skin diseases, especially eczema, is well known, or ought to be since Dr. Clifford Allbutt[1] so thoroughly emphasized the fact in his lectures on the subject, and I am only adducing confirmatory evidence of the truth of his generalisation, and extending the sweep of that generalisation, when I point out other cutaneous angio-neuroses, associated with the neurotic tendency, as diversely manifested in the same individual, and in various members of the same family.

A case of asthma associated with eczema showed on one occasion a phenomenon that was perfectly new to me. The patient has been a chronic asthmatic for many years, and has also suffered from exacerbations of eczematous patches on the arms and legs. On one occasion he came to me complaining of a feeling of tightness on the left side of the chest, and of tingling of the right arm, right leg, and right side of the body.

[1] *Visceral Neuroses*, p. 86.

The sense of effort in wheezing was referred to the left side of the chest. There were small ulcerations on the left side of the mouth. On auscultation, I found that the physical signs of asthma were confined entirely to the left side of the chest; the difference between the two sides being most distinct. I am not aware whether *unilateral asthma* has been reported or not; but if it has been, I have failed to find the record of it. An interesting fact in connection with this patient, is that the asthma has left the state of the heart perfectly normal. This case supplies materials for a discussion of a condition of the central nervous system as a cause of asthma.

A young lady, aged 24, with a neurotic family history, came under my care in October, 1893. For five years she had been an invalid. Every day she suffered more or less from pain, and every menstrual period was accompanied by pains of the most intense character—"worse than ordinary labour pains," according to the statement of the nurse in charge. Some four years previously, she had consulted a physician, who, from the history and symptoms, diagnosed uterine displacement, and advised a course of treatment by the family medical man. He, however, declared there was nothing wrong with the uterus. She was under the care of two other medical men for periods of six and twelve months, but without benefit. For months she was so bad that she had to be carried up and down stairs. When I investigated the case I concluded I had to deal with a mild case of Graves's disease, with uterine

complications. The uterus was bent upon itself, and was almost immovably fixed transversely in the pelvis; the cervix pointing to the right side. I put the patient under a course of glycerine and ichthyol tampons with hot douching. The uterus regained its proper place in the pelvis, but was considerably elongated, and although apparently normal in respect to straightness tested bi-manually, there was an impediment of some sort about an inch and a half from the external os. The patient went home much better, being free from pain for one or two periods; but whether owing to a return to former associations, or to some other cause, she had a relapse. On her return here, she had a bad attack of metrorrhagia, lasting for three weeks or more. The uterus was still enlarged, and with the old impediment. This was overcome by the use of steel dilators, and then suspicious that the impediment was due to the presence of a "polypus," I introduced tupelo-tents at intervals of a few days. This brought the uterine troubles to an end. After a short course of constitutional treatment, the residue of symptoms disappeared, and for several months now the patient has been engaging in bodily and mental work of the most laborious kind, without the slightest symptoms of invalidism or discomfort. I ought to say that this case was complicated with migraine, associated with astigmatism. The patient's sister, who also, for several years, suffered from nervous troubles and migraine, was cured by the correction of her astigmatism. This case is a good instance of angio-neurosis, as manifested in

menorrhagia in young virgins, a fact pointed out by Dr. Charles P. Noble.[1]

Mrs. T. consulted me in September, 1893, for a "chest complaint," general weakness and chronic diarrhœa. The patient looked a typical neurotic. I found evidence of great engorgement of the whole portal system, and of the lungs, and I gave a hopeful prognosis in spite of the amount of blood that was being coughed up periodically. My view of the case was justified by the cure, in a short period, of almost every condition. Then I learned how bad the case had been. The diarrhœa had continued for many years, and the amount of ether mixture she had to take for it was so great that her friends concluded from her condition and symptoms that she had taken to drinking. A hopeless prognosis had been given, the lungs on more than one occasion, and by different physicians, having been declared diseased throughout. In this case migraine was present, and was associated with astigmatism. A year afterwards or more, she came to consult me about an "eczema" of the legs, body, and scalp that had defied treatment for eight years. This I found was a most extensive psoriasis. The patient herself, after long observation, had come to the conclusion that her skin disease was "nervous." Chrysarobin had no effect upon it, so I put the patient under a course of treatment with thyroid gland extract; this caused a great improvement in a few days, but the treatment had to be

[1] *Practitioner*, June 1894, p. 430.

stopped since it brought on a recurrence of all the old symptoms.

The family history is noteworthy. A brother of this patient came under my care for hæmorrhoids of the bladder, and I have been consulted by several other members of the family, almost every one showing manifestations of neurosis. Phthisis and asthma occur in the history, and an uncle's daughter and son both died from cancer.

Two cases of cancer under my care were associated with œdema that could not be explained entirely by pressure on vessels or nerves. The following notes were taken on the same day—a day of exacerbation in both cases. "A. B. complains to-day of pain in the region of the stomach. Last night she could hardly draw her breath, and the breathing was quick, shallow, and painful. This morning the left phrenic nerve appeared to be involved in the cancerous growth (the left breast was the one affected, and the œdema was confined to the left arm). In the afternoon I observed the breathing: it was short, shallow, and painful, and the left side of the chest moved with the right. Then, in a few minutes there set in slow, deep, laboured breathing; the left side of the chest being immovable, the right heaving very much. There was pain in the neck, and all the way up and down behind the ear. The subjective feeling was described as a breathing through cotton-wool, both in the irritative and paralytic stage. There was a tendency to hiccough. C. D., the same day described the feeling in the back of the neck and

shoulder as of fleas or other insects running about, and the small and ring fingers are numb and helpless. The arm is much swollen. This feeling in the shoulder is like what patients describe as the effect of ergot in large doses. The drugs hitherto tried in order to give relief from pain are, morphia, belladonna, bromides, codeine, cannabis indica, internally; lead and opium lotion externally. All make the arm worse, causing darting pain and a feeling of fluid forcing its way through the limb. The hand and arm are œdematous. The hand is pale and pits; higher up the limb is red, hot, swollen, hard, and does not pit—the same condition of limb as is shown by case A. B. In both cases the area supplied by ulnar nerve was the first to lose sensation. In this latter case, the 'pitting œdema' travelled upwards. At a later stage of the disease, morphia in combination with atropia kept the pain in check, and a combination of bromides (Peacock's) gave rest at night. This patient showed peculiarities of breathing like the former one."

Miss A. B., aged 19, seen February 20th, 1894. She complains of pains under the left breast, and palpitation. For the past fortnight there has been persistent headache in the region of the left temple. There is "diffused" headache on the vertex, of the "depressed" variety. There is much eye strain. Examination shows vision to be as follows: Right eye, $\frac{6}{36}$ + 1·0 sph. = $\frac{6}{18}$. Left eye, $\frac{6}{18}$ + 1·0 sph. = $\frac{6}{6}$. There are attacks of migraine, with pain in the eyes and temple. She sees black spots, and she vomits undigested food. During an attack she

can eat nothing, and she drinks only lemon water. There is polyuria after an attack. There is palpitation at night and on exertion. The hands and feet are cold. She suffers from breathlessness, and slight cough in the morning. Menstruation is fortnightly and is menorrhagic. There is leucorrhœa. There is pain in the region of the left ovary. The liver is tender on pressure anteriorly, and there is pain in the right scapular region. The heart impulse is felt on the left side from the second interspace downwards, and also on the right side of the sternum. The heart sounds are normal. This patient's sister presented a picture of symptoms of the same sort, and both recovered by the use of spectacles and a course of constitutional treatment.

The father of these patients presented an excellent study in neurosis. He was a stout, active man, engaged in business of an exacting nature. He called me in to attend him for an attack of "stone in the kidney or bladder." He said he suffered periodically from attacks of this sort, and had been laid up generally for a week at a time in various towns he visited. He was informed on several occasions of the nature of his malady. I found many, very many, of the symptoms of stone of the kidney or bladder, but declining to give an opinion without considering every possibility, I insisted on examining the bladder by means of the sound. I could strike no stone. Further inquiry into the history and symptoms showed that I was dealing with a case of visceral neurosis, and a complete cure was effected in a few weeks. That was in November, 1893, and there has

been no return of the complaint. This case showed a peculiar œdematous swelling of the abdomen sometimes present during an attack. Either this or headache was present, but never both simultaneously.

Mrs. A. B. and Miss C. D., two sisters, show well-marked manifestations of angio-neurosis. One of them suffers almost constantly from an eruption that has all the visible characters of petechiæ, but the spots disappear on pressure. There are exacerbations of the eruption, and the periods of these correspond with the attacks of erythema-urticaria in many of the subjects I have referred to. This patient also suffered from congestive headaches, and, what is more remarkable, from uterine congestion and "ovarian neuralgia," though she was a considerable time past the menopause. Her sister shows a remarkable tendency to cutaneous flushing in sharply defined patches, on the slightest excitement or emotion, in fact it is her hourly trouble. Besides this flushing there are other very definite manifestations of angio-neurosis that I need not here particularise.

A patient who came under my care for Graves's disease, is subject to rheumatism and erythema-urticaria. The attacks came on coincidently with those in the patients whose cases are recorded at pages 27, 28. Her sister for many years suffered from a hard, dry, hollow cough, which yielded to strychnine. She had to give up sea bathing on account of its peculiar effects upon her. Sometimes, on coming out of the water, she had a black or blue-black band round the body. She informs me that when she was staying at a town in Monmouthshire there

was an exacerbation of the cough, and all the children in the house (her cousins) had an attack of erythema-urticaria. Her father died of "phthisis" at an early age. Her mother, when a girl and also when grown up, suffered periodically from erythema-urticaria, and from what was diagnosed as "shingles." The periodicity of the attacks, however, and the fact that the eruption was bilateral and surrounded the abdomen, taken along with several other circumstances, raise a suspicion that the attacks of "shingles" were attacks of erythema-urticaria in which the lesion went on to vesicles.

CASES I and II, reported at page 61, show asthma and erythema nodosum in the same individual, and erythema-urticaria and localised cellulitis in other members of the same family.

In one family I found one sister suffering from localised œdema and other angio-neurotic symptoms, and another from scirrhus of the breast.

I attended three sisters, one for Graves's disease, another for neurotic asthma of many years' duration which yielded to treatment by arsenic; and the third, although otherwise healthy, suffered from periodical hæmorrhage from the lungs until menstruation was properly established.

As to *individual patients*, CASE II (page 61) shows erythema nodosum associated with chronic bronchitis and asthma. CASE VII (page 64) shows the association of angio-neurotic œdema and erythema with typhoid fever and other neurotic symptoms. CASE VI (page 64) is one of erythema nodosum associated with psoriasis.

I may here refer to records of cases by *other observers*. Trousseau[1] notes the hereditary tendency to urticaria, the mother of the two sufferers being herself a victim of it and the subject of anomalous nervous symptoms; and he records a case of urticaria associated with nervous symptoms of a most formidable character. Certain circumstances led him to believe as an explanation of the association of urticaria with bronchial conditions, that a "bronchial eruption" might occur in urticaria "precisely as in measles."

To come to recent times, I would call attention to Dr. Allan Jamieson's record[2] of the condition that he inclines to call urticarial prurigo, occurring in the family of a medical man, himself subject to urticaria. In several of its strange features that condition resembles the disease I have described as erythema-urticaria. Dr. Jamieson discusses the relation of urticaria to circumscribed œdema, migraine, and other allied disorders, basing his discussion on illustrative cases, in a way that brings the neurotic basis in these various conditions into prominence.

As regards the erythemata, so many cases of the association of one form with another have been recorded that one has little hesitation in classing them all as effects of a common cause—a disturbance of the vaso-motor system; and so many "marginal cases" have been observed that the dividing line drawn by Trousseau between erythema nodosum and other erythemata may well be erased. Dr. Allan Jamieson has found erythema

[1] *Lectures on Clinical Medicine*, New Syd. Soc., Vol. II, p. 284.
[2] *Diseases of the Skin*, 2nd Edit., p. 126.

nodosum in an epileptic subject; he has also noted its association with erythema multiforme, and the association of erythema multiforme with chilblain erythema. Boeck has pointed out the association of angina with erythema multiforme and peliosis rheumatica, and so on. Dr. Gifford Nash[1] reported four cases of erythema nodosum occurring in one family within a period of ten months, and stated that a maternal aunt of the family living in the same place thirteen years before had suffered from that disease. As to family predisposition in Dr. Nash's cases and in two cases of Dr. Pye-Smith's, there is the possibility, so far as the records go, that the predisposition was to an instability of the vaso-motor system, and that locality or climatic conditions had something to do with the particular manifestation.

Similar hereditary tendencies in the case of certain forms of herpes have been noted by Dr. Dubler and Dr. G. A. Gibson.

Panas[2] records a case of dry gangrene of the foot in a patient of nervous temperament with a neurotic family history. The anterior tibial and other nerves showed pathological changes. Ehrl[3] reports a case of sloughing gangrene of parts of the face and left arm in a neurotic girl, whose sister also later on showed localised gangrene of the left breast and cheeks. Singer[4] records the occurrence of neurotic gangrene in a girl who exhibited dissociation of sensation and signs of hysteria. Féré[5]

[1] *Lancet*, July 7th, 1894, p. 27. [2] *British Medical Journal Epitome*, July 21st, 1894, p. 9. [3] *Ibid.* [4] *Ibid.*, Nov. 18th, 1893, p. 81. [5] *Progrès Medical*, Vol. I, p. 391, 1894.

reports the occurrence of cutaneous gangrene in a patient under treatment for round ulcer of the stomach, and suggests that both lesions may be due to the same nervous cause.

So much, then, regarding the characters and relations of the manifestations in which an angio-neurotic basis may be discovered. The point now, and it is the standpoint from which to view the whole subject, is this: Given an unstable vaso-motor system manifesting its effects so diversely in the same and in different organs, the question arises, "*What are the causes that may influence such a system? In other words, what are the exciting causes of such angio-neurotic manifestations?*" They are, peripheral irritation and heat, emotion, toxis, and climatic conditions.

Chapter VI.

PERIPHERAL IRRITATION AND HEAT AS FACTORS IN ANGIO-NEUROSIS.

I HAVE already touched on this subject in relating some of the cases illustrating angio-neurotic manifestations. Peripheral irritation as a cause of angio-neurosis is widely recognised and is usually not difficult to diagnose. There are, however, two observations that I should like to make on this subject, viz.: (1,) That in some cases it is difficult to say whether one is dealing with peripheral irritation or toxis; and (2,) That the peripheral source may be difficult to find when there are no symptoms to assist in localising it.

The first observation refers to such cases as the ingestion of "poisonous substances" such as shell-fish, which is often followed by erythema or urticaria. In these cases it is difficult to say how much of the effect is due to local gastric irritation and how much to toxines. In many cases, considering how very suddenly the urticaria follows on the ingestion and how soon it disappears when the meal is vomited, one inclines to the conclusion that the theory of local irritation is more probably the correct one.

A narrative of some cases will help to illustrate the truth of the second observation, that the source of irritation may be very obscure.

Miss A. B., consulted me for a small spot of eczema on the left cheek. There were one or two small herpetic vesicles near it. In a day or two a triangular patch of herpes appeared surrounding the eczematous spot. There were tender spots corresponding to the exits of the fifth nerve. Examination of the mouth showed one doubtful tooth, the first lower left molar, and I advised its removal. The tooth had given rise to no pain or trouble of any sort, but the teeth in that part of the jaw were very much crowded together, and I had little doubt that there was mischief at the roots of the tooth. When the tooth was extracted it was found that the tips of the fangs were eroded by chronic abscesses. The herpes disappeared in a few days after.

Miss X., consulted me for a swelling on the left cheek. The swelling is in the malar region and is red and painless. It has not been hard so far as she has observed. It has been very pronounced for the past few months. The teeth appear all right. Excitement causes no difference. The pupils are equal in size. There are no tender spots; nor is there pain anywhere. *The left eye leads*,[1] though the patient is right handed. Examination of the eyes showed three dioptres of myopia in both, with half a dioptre of myopic astigmatism in the right eye. I prescribed spectacles, nothing else. Ten days afterwards I saw the patient again. The swelling was less;

[1] My experience on the subject of the "leading eye" is that the right eye leads (and does so even in left handed people) unless vision in the right eye is very defective.

both eyes were "off," neither leading. I lost sight of this patient on her removal to Scotland.

In connection with this subject of peripheral irritation, I should like to refer to a case of Mr. A. G. Miller's[1] in which epilepsy was cured by operation on the contracted palmar fascia, where there was no suspicion of any causal connection between the two conditions.

As regards cases where a peripheral source of irritation is found, I would emphasize the fact that an observer may be very easily misled by an effect that seems entirely out of proportion to the cause, and so may overlook the real *fons et origo* of the mischief. Nowhere is this more common than in the pelvis. The following case is an illustration.

Mrs. A. B., was bedridden for several months after her first confinement, in which delivery was instrumental. Leucorrhœa and slimy and purulent diarrhœa were constant. The stomach would keep nothing. The patient suffered from the most persistent and violent pains, with flushings, feverishness and perspirations. She appeared a nervous wreck. Examination *per vaginam* showed an enlarged and congested uterus, but what was most evident was a great tenderness on pressure on the rectum. Rectal examination disclosed an anal ulcer extending upwards for about two inches. I operated on this, incising the base of the ulcer and the tight "rings" at its extremities in a very free fashion. This was followed by almost immediate relief from the

[1] *Edinburgh Medical Journal*, July, 1893.

former pains, and in about six weeks all pelvic, abdominal and other symptoms had disappeared. No operation on the uterus was necessary.

How far *heat* acts locally or reflexly is a subject that demands investigation. But that its action is an important factor in angio-neurosis there is no doubt. The observer, whose case is recorded at page 29, informs me that the vaso-motor nerves were in a condition of paralysis for weeks. The vessels would not contract; they were in a state of functional diffused angiectasis, following a preliminary state of deathly pallor produced by cold—the stage of the "discharging lesion."

The diabetic patient, whose case is recorded at page 54, shows a distension of the vessels of the face every time she is exposed to the heat of the sun or of a warm room. It is to be noted that this has lasted since childhood, and is entirely independent of excitement or emotion. Heat, pure and simple, is apparently the only cause, and the effect of exposure is invariable. The vascular distension is not confined to patches, as is often the case in such angio-neurotic manifestations, but affects the whole of the face. This condition is the counterpart of the neurotic diarrhœa from which this patient suffered to such an enormous extent.

The effect of heat on a persistent local patch of erythema is also shown in the case recorded at page 34.

There is a condition just the opposite to this, viz., one in which the cutaneous vessels will not dilate. So far as I am aware its occurrence has never been recorded. I have seen two instances of it. Both were

in men past middle life. I select the second case as very typical.

Mr. A. B. consulted me about a swelling of the first inter-phalangeal joint of the middle finger of his right hand. I thought I was dealing with a local injury in a system predisposed to rheumatism (I have seen a similar injury resulting from pressure of the reins in *driving*), and questioned the patient about any history of injury. He could recollect none. Afterwards, however, he discovered he was in the habit of carrying a handbag, sometimes pretty heavy, with the strap passing over that finger. Liniments made no impression on the joint, so I said I would try to blister it. My patient caught at the expression "try to," and asked if there was any doubt about the possibility of blistering the joint. Remembering my former experience in my first case, I said I was quite prepared to find that it would not blister. I tried canthos, then pure liquor epispasticus several times, and then his wife made a last endeavour by wrapping up the joint in croton oil ; but everything proved useless. The skin would not blister.

This patient shows some peculiarities bearing more or less on the subject. He tells me he never felt hungry in his life, and that until he had an attack of uric acid in the system recently he never knew what an ache was nor a pain. His nervous system seems of the most stable description ; but his heart is at times intermittent, and he had a prolonged and severe attack of hard racking cough, which yielded in three or four days to treatment by strychnine. His hands at times show spots that look like petechiæ, but disappear on pressure.

Chapter VII.

EMOTION AS A FACTOR IN ANGIO-NEUROSIS.

Emotion as a cause of pathological conditions has received wide attention. A very complete account of the subject will be found in Féré's *Pathologie des émotions*, chap. vi. Among the skin diseases there enumerated that have been produced by painful emotions, are local syncope, erythema, urticaria, purpura, eczema, psoriasis, herpes, pemphigus, prurigo, vaso-motor œdema—all of which may properly be classed as angio-neuroses. But a mere enumeration of conditions following emotion is of little help in considering the present subject. What one desiderates is a record, in every case, of coincident or associated conditions or well marked tendencies in the individual, and a careful statement of the family history. Only with these before us can we appreciate the neurotic element at its true value, as one of the conditions of the manifestations. Such records are scarce.

To come to cases where a neurotic basis has been noted. The part played by emotion in the etiology of such diseases as Raynaud's disease, diabetes and Graves's disease is well recognised.

In a case of Raynaud's gangrene, which developed in an old woman I was attending, emotion was a powerful

factor in the causation. She and her husband were both strong, healthy individuals, but for some slight ailment they were recommended to take Sequah's Prairie Flower. After a few doses the husband began to suffer from violent diarrhœa, and when I was called in I found him utterly exhausted. He died in a few hours. His wife, who had also been sorely purged, was very much shocked at her husband's death, and in a few days developed dry gangrene of the feet and then of the hands.

As regards diabetes, I have recorded[1] one case where, in a typically neurotic subject, exhausting, mental and bodily effort was undoubtedly the cause. This case is of much interest, since treatment of the diabetes according to approved principles had served only to aggravate the condition, and a return to ordinary diet and habits caused the disappearance of the symptoms.

"Coulon records three cases in which jaundice supervened in three children of nervous diathesis shortly after emotional excitement — in one case, a girl aged 9, after a fright; in two others, girls aged $10\frac{1}{2}$ and $13\frac{1}{2}$ years respectively, after a fit of anger produced by punishment at school."[2]

Dr. Lubbock[3] records a case of a highly sensitive young lady who thirty-six hours after an instrumental labour developed jaundice, due possibly to emotional disturbance, but possibly also, as the record shows, to foul lochia.

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[1] *Edinburgh Hospital Reports*, Vol. iii. [2] *British Medical Journal Epitome*, May 19, 1894, p. 77. [3] *Ibid.*, April 21, 1894, p. 896.

I have seen repeated attacks of profound jaundice lasting for only a few hours in a woman suffering from visceral neuralgia and the subject of migraine.

In view of our ignorance of the mode of production of jaundice in such cases, one hesitates to quote these unreservedly as instances of angio-neurosis due to emotion.

In the two cases I have recorded (pages 9 and 14) of general angio-neurotic œdema, prolonged and profound mental emotion in neurotic subjects was undoubtedly a factor in the causation.

Ehrman[1] describes a particular form of skin disease, which he terms dermographismus, and ascribes it to mental excitement (without the presence of a toxic substance) acting on the nervous system. He allows that this condition may co-exist with urticaria, but he holds that the causation is different—urticaria, in his opinion, depending upon the presence of some toxic substance. That a toxic agent is necessary in the production of urticaria is a statement to which many will demur.

[1] *Lancet*, June 30, 1894, p. 1634.

Chapter VIII.

TOXIS AS A FACTOR IN ANGIO-NEUROSIS.

This again has been studied in connection with diseases presenting a neurotic basis. Frerichs and Saundby have described septic diabetes. The connection between toxis and Graves's disease and allied conditions, is dealt with most recently in Dr. Edward Blake's *Myxœdema, Cretinism and the Goitres.* Dr. Blake in his former work *Sewage Poisoning*, enumerates diseases in which one may look for sewage infection as a cause; and many of these may, without doubt, be regarded as angio-neurotic. Further, in *Septic Intoxication* (section iii.), he gives records of cases of the sort most needed in investigating this subject.

In considering this subject of toxis I wish to refer to Case VII. (page 64), and to consider the events and diagnoses in historical sequence. This patient from the age of 20 suffered from a series of boils, or abscesses (which began as pimples) on the legs, abdomen and arms, but not on the face. Usually more than one existed at a time; and this continued for four years. A few months before I saw her she consulted Sir James Sawyer[1] about her condition—doubtfully a chest affec-

[1] Sir James Sawyer informs me that there was a suspicion of pulmonary phthisis, which he was able to exclude.

tion. During the course of the attack of typhoid in which I attended her, constipation throughout was a prominent symptom. When the swelling in the left leg first appeared, the question arose, What is the cause? Uterine phlegmasia dolens was out of court. But that did not simplify matters much. Was I dealing with an œdema caused by thrombosis of the femoral vein? This is mentioned in text books as a complication of typhoid, not uncommon as complications go; but I fancy that the text book statement on the subject is of the sort one often sees — a repetition of some old untested theory or observation that has become authoritative from its "much repetition." At any rate when one begins to inquire into the subject of thrombosis of the femoral in typhoid, one is beset with many difficulties. This is not the place to discuss the bearings of this subject; I would only state that after a careful study of two cases of "femoral thrombosis in typhoid" occurring in my practice in which I found no evidence of thrombosis of the femoral, I have read the classical cases of Graves and Trousseau with new interest and a growing conviction that the neurotic theory of origin has much more support in fact than has the thrombotic. In CASE VII., which was one of the two I have seen, I ascribed the œdema to neurotic origin, and if I had been asked for a probable or possible hypothesis of origin I believe I should have chosen to ascribe it to the constipation or the typhoid poison. When, afterwards, the erythema appeared, I was strengthened in my conviction that the cause was neurotic. Finally, when

the patient was convalescent, she had an attack in both legs of general erythema. The red rash extended over the whole of the skin and showed small herpetic eruptions, intensely itchy—"all the pimples wanting to run into one," as the patient said, with burning pain in the heels. Two or three days afterwards desquamation set in. This attack made my diagnosis of a neurotic cause a moral, if not a logical certainty, recalling the conditions I had previously seen in the typical cases of angio-neurotic œdema that had come under my notice.

I have found, as will be seen from cases recorded here, erythema-urticaria coincident with septic poisoning of the hand; erythema nodosum, in more than one case, evidently due to poison from without; erythema nodosum and chronic psoriasis coincident with sewer-gas poisoning; and angio-neurotic œdema and erythema in the course of typhoid fever.

The association of urticaria with the ingestion of poisonous substances is well known. Frank[1] saw urticaria complicated in such a way with quotidian and tertian ague as to appear epidemic. Copland[2] saw it, though not so often as erythema and roseola, in acute rheumatism, also in association with cutaneous eruptions, epecially erythema, roseola, lichen,. occasionally impetigo, and with chronic visceral disease and cancer, and after miscarriage in nervous women.

In the course of a report on "A Case of Septic Osteomyelitis with erythema multiforme"[3] Dr. Colcott Fox

[1] *Copland's Medical Dictionary*, Vol. iii., part ii., p. 1238. [2] *Ibid.*
[3] *Lancet*, Aug. 4, 1894, p. 255.

remarks very pertinently that we must regard eruptions of the erythema multiforme kind as possible in any toxæmia, whether the agent be inorganic or organic; and after enumerating some of the diseases in which such eruptions occur, he gathers together and compares statistics of eruptions in cases of influenza, infective osteo-myelitis, general pyæmia and infective endocarditis.

Dr. Suckling[1] has recorded two cases of scarlet rash after enemata, and refers to Dr. Burford as having noted such cases. Dr. Burford[2] pointed out and illustrated the cause of such occurrences, showing that fæces if dry may remain innocuous in the intestine for an indefinite period, but when they are liquefied a diffusion of toxic matter occurs from the bowel into the general system, often giving rise to a sharp attack of urticaria.

Rashes after child-birth are far from uncommon, and unfortunately give rise too often to wrong diagnosis of scarlet fever or erysipelas. Gaertig[3] records a case of a woman who in three successive confinements developed an erythema after labour, each labour being complicated with flooding and adherent placenta.

Wasp-stings sometimes give rise to severe constitutional symptoms with local erythema. Dr. Balfour Marshall[4] records a case of wasp-sting giving rise to itchiness of the body, great swelling of the face, and a scarlatinal-like rash on the chest and abdomen. Dr. Saunders[5] records a case with similar symptoms.

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[1] *British Medical Journal*, June 2, 1894, p. 1190. [2] *Lancet*, Dec. 13, 1888. [3] *British Medical Journal*, *Epitome*, Sept. 22, 1894, p. 46. [4] *Ibid.*, July 29, 1893, p. 292. [5] *Ibid.*, Sept. 30, 1893, p. 772.

The records of cases of skin rashes following the introduction of poisons into the system, or the absorption of poisonous substances generated in the intestines, are very numerous ; but the majority of them lack the elements that prove of value in the study of the etiology of those rashes, viz., a statement of the associated conditions and the constitutional and hereditary tendencies.

Chapter IX.

CLIMATIC CONDITIONS AS A FACTOR IN ANGIO-NEUROSIS.

This subject has received but little attention. In order to illustrate the subject I select the following cases. They are all taken from my case-books for the very limited period of two months, if Case I., which is introduced for a specific purpose, be excluded.

Case I.—On 25th June, Miss W. consulted me regarding a skin rash on the body and limbs, associated with intense itching. It proved to be an example of erythema-urticaria. She was a domestic servant, not living at home.

Case II.—On 14th July I was called to see Mrs. W., aged 53, mother of the girl recorded as Case I. She was suffering from bronchitis and asthma. From this she recovered in two or three days; but on 31st July she developed erythema nodosum with high temperature and great prostration. There was a patch on each shin and a patch on the inner aspect of the left knee. She noticed that the patches "went quite black before they went away;" and she states that her left leg swells very much, especially if she moves about a bit. Her son at the same time was suffering from

painful inflammatory swelling of the upper lip, of the sort that one sees arising from wounding of the inner surface of the lip by septic matter.[1] I may mention in connection with these cases of mother and son and daughter, that some months previously I attended seven of the family for a severe form of gastro-intestinal irritation, which I had no hesitation in attributing to the eating of an unsound leg of mutton.

CASE III.—On 14th July I was called to see Mrs. J. She was complaining of pain all over the body, but especially in certain parts of the limbs. She felt weak and feverish. An examination showed patches of erythema nodosum on the arms and legs, and a patch of sacral œdema. In connection with this case I ought to mention that the patient and her husband occupied a bed-room which had a small recess, containing a bath. The discharge pipe of this bath was the ventilating shaft of a blocked-up system of filthy drains. Both patients had been living for months in an atmosphere charged with drain effluvia. In the husband's case the symptoms were languor, indigestion, nerve-storms and mind-storms, flushings, sinkings and irritability of the nerve-centres, especially of the cord—a group of symptoms I found in another patient (a sufferer from cardiac

[1] This condition reminded me of a case described by Dr. Fitzgerald in *Edinburgh Hospital Reports*, vol. i., p. 183, where such swellings occurred periodically in a subject who had been troubled "most of his life with attacks of shortness of breath, apparently of an asthmatic nature."

trouble) which she described in her own words thus: "If I were to give my own opinion of what is wrong with me I should say I was suffering from blood poisoning." In the wife's case the symptoms were, as I have said, profound weakness, high temperature, and erythema nodosum.

CASE IV.—On July 24th I was consulted by Miss J. W., age 25. She had the typical rash of erythema-urticaria all over her body, none on the fingers and toes; a well marked zone on the trunk, and spots on the arms and legs. She felt "fidgetty" before the spots appeared—which they did the previous night. There was no constipation. She had suffered from a suppurating thumb for a month previously, and Crookshank's glands and axillary glands were swollen and tender.

CASE V.—Seen 6th August. This was a young woman who had been under treatment for a fortnight by a chemist for a swollen hand. He advised her to go to a surgeon to have the hand and arm lanced. I could find no obvious wound. Crookshank's glands and the axillary glands were enlarged and tender; the hand and forearm were much swollen; there appeared to be pus under the palmar fascia, and in the hypothenar eminence, but I strongly doubted its existence. I saw the patient again after two days' treatment by drugs, without surgical interference, and the only abnormal appearance perceptible was a slightly red patch on one of the fingers.

CASE VI.—Mrs. K. Seen on 10th August. This was a typical case of erythema nodosum confined to the region of the tibia on both sides. But this patient was suffering, and had for a considerable time suffered from psoriasis distributed in small patches fairly well all over the body and limbs. She stated that at home (she was a visitor to Rhyl) some rooms of the house were almost uninhabitable on account of sewer gas smells.

CASE VII.—Mrs. H., aged 32. This is a very instructive case. The patient was exposed to the effluvium of a discharging sewer on 22nd July. I saw her for the first time on 29th July. The symptoms then pointed to one of two things—gastric ulcer or enteric fever. On 1st August the diagnosis was clear beyond doubt—enteric fever. On 8th August the left leg became swollen and painful. The swelling was most marked in the thigh and ham. The patient could not move the leg. She described the sensation as "tingling, and a feeling as if blood were dropping from a burst vein." There was no pitting on pressure, and no discolouration, but two days afterwards a pink blush appeared below and anterior to the external malleolus. This erythematous patch was excessively tender to the touch. There was tenderness over the saphenous opening and along the inner aspect of the thigh, also underneath Poupart's ligament in the region of the femoral vessels. In both of these regions the tenderness involved the glands (which were slightly enlarged), but was not confined to those structures. The erythema disappeared in ten days. The tenderness

I have mentioned continued for upwards of a month. As the greater swelling went down (which it did in the course of about three weeks) there was a feeling of pins and needles in the limb, and afterwards in both limbs.

CASE VIII.—P. J. D. an iron moulder, consulted me on 11th August for sepsis of the right hand, following an injury to a finger nail. Crookshank's glands and the axillary glands were enlarged and tender.

CASE IX.—Boy, a brickworker, consulted me on 20th August for cellular inflammation of the hand with sepsis. The other symptoms were the same as in CASE VIII. Both hands had several wounds, and both had been employed at the same work, but one arm only suffered.

CASE. X.—Baby brought on 3rd September for a skin eruption on the left malar region. The spots began as the typical urticarious spots I have described. They were three or four in number, and within twenty-four hours they had become pustular. This is the first case in which I have seen such spots become pustules. Next day a crop appeared on the right malar region, and they followed the same course—going on to pustules. They afterwards appeared on the neck and upper part of the chest.

CASE XI.—On 4th September I was called to see a man in the country. He had been vomiting and faint-

ing, and he complained of pains in his whole body —listlessness, headache, cough, sweatings. The case proved on examination to be one of enteric fever with intestinal hæmorrhage.

Trousseau in discussing intestinal hæmorrhages in typhoid fever, and showing that they were not to be explained entirely by the ulcerations, says[1] "I have asked myself whether the influence of a prevailing 'medical constitution' might not sometimes explain the occurrence of these hæmorrhages. Some years ago, I was meeting with them in typhoid fever, and at the same time was also meeting with passive hæmorrhages in other diseases. I had at that time cases of purpura hæmorrhagica, black small-pox, and numerous examples of the petechial scarlatiniform eruptions, which I have pointed out to you as occurring at the beginning of varioloid affections."

CASE XII. in the series above is an instance of hæmorrhage in typhoid (I saw another[2] soon after) occurring at a time when climatic conditions were strongly suggested as causes of allied affections. Three cases of erythema nodosum in adult patients in a period

[1] *Lectures on Clinical Medicine*, New Sydenham Society, Vol. ii., p. 333.

[2] The patient was a child 21 months old. In this case there was a patch of erythema on the abdomen over the region of the stomach. When I first saw the child he was so exhausted that recovery seemed hopeless. The heart was weak, slow and intermittent, and Cheyne-Stokes respiration was well marked for some time before death. The child's father suffers from asthma, eczema and an erythema that goes on to large blebs.

of four weeks, is a record I expect never to see again, and one that I hardly thought possible. And as regards the septic cases I have recorded (which are only selections from what I was attending) I cannot but think that some sort of "medical constitution," as Trousseau calls it, plays a part as a factor. am the more convinced of this by the unusually large number of neuroses of this sort, and other sorts, specially visceral and cutaneous, occurring at the same time, and recurring coincidently almost to a day.

Copland[1] mentions "atmospheric vicissitudes" as causes of local affections, particularly inflammations, occurring in typhoid fever ; and in another place[2] states that though hæmorrhages (in general) are scarcely ever epidemic, yet at Breslau they prevailed at one time to a remarkable extent — children having epistaxis, adults hæmoptysis, and the aged hæmorrhoids.

An extensive study of the disease I have called erythema-urticaria has led to the conclusion that in the apparent epidemic incidence of that disease, climatic states form the only common condition to which the patients are exposed.

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[1] *Medical Dictionary*, Vol. i., p. 1002. [2] *Ibid.*, Vol ii., p. 65.

Chapter X.

PATHOLOGY OF ANGIO-NEUROSIS.

The pathology of the local manifestations of angio-neurosis has been explained by Kaposi[1] on the lines laid down by Eulenburg and Landois. It is briefly this, that a stimulation of the vaso-constrictor nerves, or the inherent protoplasmic vitality of the capillary walls, causes a contraction of the small arteries in the papillary layer of the skin. This is followed by a paralysis of the vaso-constrictors or a stimulation of the vaso-dilators which causes a hyperæmia of the part. The changes may stop at this stage or go on to an effusion of serum into the skin, causing an infiltrated red patch; or further, viz., to an outpouring of serum beneath the epidermis, giving rise to bullæ. Briefly, according to severity, the lesion may be macula, papula, tuberculum, vesiculum, bulla.

In the disease I have named General Angio-neurotic Œdema, the local lesion in severe attacks corresponds very closely to the hyperæmia of scarlet fever. At certain small points the upper surface of the skin is raised up in the form of minute vesicles, and these often follow the distribution of particular nerves. I doubt the existence of a "paralytic stage" in this particular manifestation.

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[1] *Path. u. Therap. d. Hautkrankheiten*, p. 299, 1887.

In the disease I have named erythema-urticaria, the "paralytic stage" may usually be well seen, but it is often extremely brief. The wheal shown at the extremity of the mid-finger in *Fig. B*, is very characteristic, the central spot, the spot of maximum intensity, being a hæmorrhage. In this manifestation the distribution of spots may be irregular or symmetrical, and in some cases the course of the nerves is fairly well mapped out. The rapidity with which the spots appear and pass through the various stages, is remarkable. In this connection I may record an observation that shows how very rapid the exudation of serum into and underneath the skin must be. The girl whose photograph is given in *Fig. F*, fell one day and bumped her forehead on the stair banister. She was picked up *within four seconds* of the stroke, but within that period a perfectly hard, localised swelling of the size of a pigeon's egg, had appeared on the forehead. This was serous, not hæmorrhagic. The application of a pad of cotton wool and an elastic bandage reduced the swelling entirely in an hour or two.

As regards the part played by the vaso-constrictors and vaso-dilators respectively, it appears to me that the conditions I have described under general angio-neurotic œdema and erythema-urticaria are best explained on the theory that they are produced by a paresis or want of tone in the vaso-constrictor centres. Our knowledge of the vaso-dilator centres and fibres, so far as it goes, shows that the effects of the dilator nerves are far less extensive and much less marked than those of the constrictor.

I have little to add to the theories of how the vaso-motor centres are influenced reflexly or directly. The only criticism I venture to make is on the subject of local action. The statement is made,[1] that stimuli applied to the skin may act locally upon the vessels of the papillary layer, and that this is illustrated by the red line that appears after a thumb-nail pressure, and the œdema produced by the poisonous stings of insects. I doubt if this theory of purely local influence can stand the test of rigorous examination. Reflex action is not so much a thing of time as of condition or state; and the reflex "condition" is really present in almost every part of the skin or tissues, waiting only a local cause to determine its appearance reflexly (either at the spot or at some other spot), such as the thumb line, or the rubbing which is followed by urticarial wheals. One may reasonably doubt the completeness of the proof that vessel walls re-act apart from nervous influences.

In connection with the pathology of angio-neurosis, I would direct attention to the action of chloroform as recorded in clinical observation on page 12, and refer to the experimental evidence on this subject lately published by Dr. Leonard Hill,[2] in which he shows that chloroform rapidly paralyses the compensatory vaso-motor mechanism, while ether does so only slowly and when pushed in enormous amounts. Patients with an unstable vaso-motor mechanism should have chloroform administered to them only with the greatest caution, and ether should always be at hand during the administration.

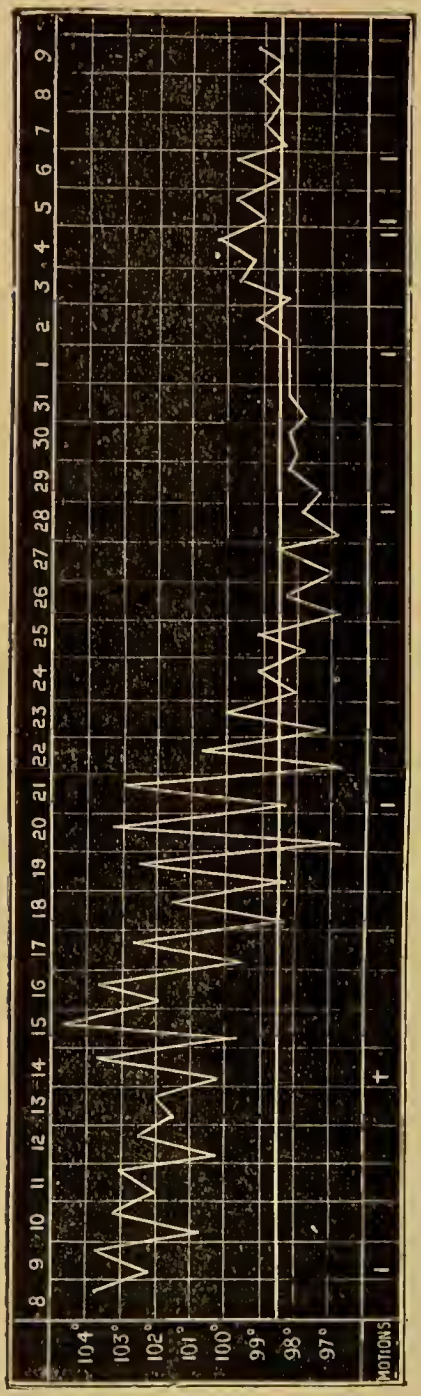
[1] See Hamilton's *Text-book of Pathology*, Vol. ii, Part ii, p. 870.
[2] *Lancet*, Feb. 9, 1895, p. 339.

Chapter XI.

TREATMENT.

In the first place reflex irritation is so commonly a cause of angio-neurotic manifestations that a search for a peripheral source of irritation should be a matter of routine. When one has seen a few cases recover when a peripheral condition, unsuspected as a cause because apparently quiescent, has been attended to; and when one considers also some cases where the last link in what proved to be the reflex chain was so distant as to be apparently unconnected with the first; then one realises the great importance of neglecting no possible source of irritation. We are beginning to realise, thanks to the teaching of Graves and John Hilton and others who have followed in their steps, something of the inter-dependence of affections of different parts. The connection between migraine and eye-strain may be said to be fairly widely recognised; the connection between rectal ulcer and the symptoms it gives rise to in other parts of the body is scarcely so well known; and he would have been a bold theorist who would have causally connected epilepsy with Dupuytren's contraction.

The treatment of toxis when this is a cause of angio-neurotic manifestations requires a word or two. In one case of mild exophthalmic goitre, the patient declared



she always felt worse after a dose of aperient medicine. This, no doubt, was due to the absorption into the circulation of poisonous products from the intestine, consequent upon liquefaction of the previously hardened fæces. This comes to be of practical importance in the treatment of constipation where there are poisons in the alimentary canal, as in typhoid fever. The accompanying chart* is an object lesson in this subject.

The case came under my observation on the 6th of October, 1894. The chart is kept from the 8th. The patient was a girl 7 years old. She was put on milk diet with strained soups; but the social circumstances were such that milk formed almost the sole food. The only medicine given was five-minim doses of dilute hydrochloric acid in glycerine and

* Reprinted by permission from the *Med. Times and Hosp. Gaz.*

water three times a day. On 14th October an enema of soap and water was given, and the effect of it is seen in the rise of temperature. On 23rd October, the pulse fell to 60°, and as both pulse and heart were intermittent, one minim of the solution of strychnine was added to every dose. On 25th October, the pulse and heart were regular. After the enema on 14th October, the bowels were rigorously let alone, and they moved of their own accord on the dates marked on the chart. The threatened relapse on 2nd November, was due to an illicit feed of potatoes, beef, and sweets. The result of the case was recovery.

The most noteworthy feature of this record is that, at a time when all the circumstances were constant and favourable, an enema disturbed the regularity of the temperature chart and the patient's condition in a way that one has no cause to be proud of; and that afterwards the fever resumed its usual course, the bowels moving only at long intervals.

There is little doubt that the rise of temperature in this case was due to the absorption of toxines from the alimentary canal; and I have no hesitation in saying that in the circumstances I ought not to have allowed an enema. But some may say, "If any of the round dozen or more of common intestinal antiseptics had been employed as routine practice, the enema would not have done this harm." Probably true, but there is another consideration, viz., that if neither antiseptics nor enema had been administered the result would have been the same, or better, and the patient's comfort greater. The

truth of this is shown by the record of the case after the bowels were let alone.

About the advisability of a purge at the beginning of an attack of typhoid, probably most physicians will agree. A dose of calomel, or something else, naturally takes the place of the old-time blood-letting. But as to the employment of purgative doses of calomel or anything else in the course of the disease, there is some difference of opinion. Hilton Fagge, speaking of the treatment of constipation in the course of the fever, says, "No qualified man would think of giving ordinary laxatives in a case of enteric fever."[1] Men like Liebermeister and Barr must open their eyes not a little when they realise either that they are not qualified men, or that calomel in four-grain doses, and castor-oil in tablespoonfuls, are not to be classed as ordinary laxatives. Fagge's assertion is too sweeping. Ordinary laxatives are pretty freely used by qualified men in cases of enteric fever, not only at the beginning of an attack, but more or less constantly throughout the whole course of the fever.

I may at this point digress in order to consider the place of calomel as a routine antiseptic in typhoid fever. Barr thinks that when salol is used as an antiseptic and the bowels are confined, calomel may be added to salol in doses of one-twelfth of a grain. He says,[2] "The great mistake in ordering calomel is in giving it in too large doses; one-half grain in twenty-four hours should

[1] *Principles and Practice of Medicine.* 2nd Edit., Vol. i, p. 206. [2] *The Treatment of Typhoid Fever*, p. 51.

be sufficient for any ordinary mortal who is suffering from typhoid fever.[1] When I read of Liebermeister giving repeated doses of eight grains each, I am forced to conclude that Germans and Englishmen require different treatment." One may remark that whatever Englishmen may *require*, they have long been subjected to doses little short of Liebermeister's at the hands of Murchison and others, and have survived the treatment. The fact is that in typhoid, and apart from typhoid, five-grain or eight-grain doses of calomel are often less disturbing to the system than doses of one grain or half a grain. Time after time I have seen a grain dose keep a patient wakeful, purging and painful half a night or more, while to the same patient a five-grain dose[2] gave refreshing sleep with one or two motions in the morning. I look upon calomel in five-grain doses, or thereby, as a valuable "hypnotic" in vascular congestion, heart disease, fevers, and many such conditions; and in the sleeplessness of typhoid fever I have used it unhesitatingly and with the best results. If calomel is indicated either in this way or as a general antiseptic, then doses of five grains are no more likely to do harm than doses of one-twelfth of a grain, whether the recipient be German or English.

I have alluded to the indications for the use of calomel in the course of the fever. Constipation *per se* is no indication for anything except "masterly inactivity."

[1] Barr, however, employs it in doses of one, two, three and four grains at intervals, in the course of the fever.

[2] It is well to combine it with soda.

Nor ought we to consider the anxiety of the patient's relatives and the desire of the physician or the nurse to see a beautifully regular "motion chart" sufficient indication for interfering. When, however, there is sleeplessness, delirium, vascular congestion or depression of spirits associated with constipation, there may be occasion to interfere, and the question of the treatment arises.

Some have recommended an increase in the amount of beef tea and strained animal soups with a diminution in the quantity of milk; but in many cases this aggravates the conditions that one is seeking to alleviate, proteids yielding poisonous products more readily than milk diet. Probably the employment of malted milk (Horlick's) would be a great improvement upon this mode of treatment. I have found it give excellent results in constipation with meteorism, at the same time using home-made raw meat-juice.

The application of a cold water compress to the abdomen may effect the desired object, as it often does when there is no fever. Enemata and glycerine suppositories I pass by, as more likely to do harm than good—at least there is a risk that is not worth running. A large dose of calomel is much more likely to do good. It may be combined with or followed by fifteen grains of jalap powder (or more of the compound jalap powder) after Trousseau's method. It may be well to recall the fact that Trousseau also employed infusions of senna, and presumably he was a qualified man.

I am perfectly aware of all the arguments against the use of calomel, founded upon theoretical considerations

of what it may do in cases of constipation. When the urgers of these considerations are able to write *has done*, instead of *may do*, it will be time to consider the objections, not till then.

But there is another method that has yielded good results, and that may be considered by many as not so old nor so risky as calomel, viz., administering a combination of salol with oil, either continuously or intermittently as a laxative. A drachm of Christy's oil (*Palma Christi*), which is castor oil without taste or smell, will dissolve ten grains of salol, and this can be emulsified and sweetened so as to taste like honey. Children take it well.

In septic cases such as those mentioned on pages 62, 63, the results were obtained by the internal administration of sulphocarbolate of soda, and cholagogues.

To pass from the treatment of cases depending on peripheral irritation and toxis to cases where the neurotic basis demands most consideration, I may mention some drugs that have found favour through their very general usefulness in many angio-neurotic conditions. Arsenic has long held a foremost place in the treatment of such maladies as asthma, especially of the sort associated with eczema. I have employed this drug in combination with others very extensively in almost all kinds of angio-neuroses. A favourite formula is the following :—

℞ Acidi Arseniosi gr. $\frac{1}{60}$ | Pilulæ Ferri Bromidi gr. iv
Ergotini gr. j |
Fiat Pilula. Sig.—One to be taken three times a day after food.

A course of this treatment, after exciting causes have

been removed, usually effects a cure. Several cases of Graves's disease have recovered under this treatment. Strychnine is of great value in many cases. In bronchitis where there is cardiac weakness and a constant hard racking spasmodic cough, I have rarely found it fail. Quinine is more generally useful than one would expect, especially in adults. The attacks in the case recorded on page 29, were checked like a charm by its use. It may be well to recall the fact that Watson[1] was so well satisfied with this drug in the treatment of erythema nodosum that he "felt no temptation to try any other." Many cutaneous manifestations of angio-neurosis are much benefited by ichthyol locally in combination with lanolin. If the irritation is very great, vinolia may be of more service.

[1] *Principles and Practice of Physic*, 4th Edit., Vol. ii, p. 923.

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